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IN TWO SECTIONS

Section I

N.A.C.A. LIBRARY

IN THIS ISSUE

Several Phases of Budgeting for an Office Appliance Manufacturer, by Stanley Zweckbronner..... 727

Budgeting for Control, by Clem N. Kohl..... 746

This Bulletin is published semi-monthly by the National Association of Cost Accountants, 385 Madison Avenue, New York. Subscription price, $10.00 per year. Entered at the Post Office, New York, N. Y., as second-class matter August 28, 1925, under the Act of March 3, 1879.

EDITORIAL DEPARTMENT NOTE

We have always prided ourselves on the practical information supplied by the articles published in the *N.A.C.A. Bulletin*. Theories and principles have received their share of consideration, but above all the *Bulletin* articles have provided down-to-earth expositions of methods and procedures found in actual practice. The two articles in this issue of the *Bulletin* are good illustrations of the value of such material. Probably no company, other than the two dealt with in these articles, could utilize completely the methods outlined in either of them; on the other hand, there probably are very few companies now using or contemplating budgetary control which could not profitably utilize one or more of the many points presented in these two articles. Any budgetary control plan to be most effective must be modified to meet changing conditions and to utilize best current practice. The two present articles should be of aid in appraising your current methods.

The author of our first article, Stanley Zweckbronner, received his education in Management and Accounting at New York University. Following graduation he was employed in the payroll, cost, budget and cost departments of several organizations, and for two years operated a small business engaged in the manufacture of grocery specialties. In 1930 he joined the Monroe Calculating Machine Co., where he now has the position of Supervisor of Costs and Budgets. He has been responsible for the budgetary control system developed by the company. Mr. Zweckbronner has been an active member of our Newark Chapter which he is currently serving as President.

Our second article is by Clem N. Kohl, Controller of the Gates Rubber Co. of Denver, who received his education at the School of Commerce of the University of Denver. For the past 22 years he has been associated with the Gates Rubber Co., and has served as Controller for the past 19 years. During this period his company has grown to the point where it is one of the major manufacturers of the Denver area.

Articles published in the *Bulletin* present many different viewpoints. In publishing them the Association is not sponsoring the views expressed, but is endeavoring to provide for its members material which will be helpful and stimulating. Constructive comments are welcomed and will be published in the Forum Section of the *Bulletin*.

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FEBRUARY 15, 1940

SEVERAL PHASES OF BUDGETING FOR AN OFFICE APPLIANCE MANUFACTURER

By Stanley Zweckbronner, Supervisor of Costs and Budgets, Monroe Calculating Machine Co., Orange, N. J.

IT IS not the purpose of this paper to treat the subject of budgeting generally, nor to attempt an abstract discussion of principles. Neither is it the intention to describe a complete industrial budgetary control system. Rather, this article is a description of several phases of budgeting in their specific application to a company manufacturing and selling office appliances.

The paper is divided into three parts. The first part covers a description of *forecasting* sales and preparing the sales budget. The second sets forth the inventory policies and explains the procedure of *planning* production. The last part explains how the variable expense budget is set up to measure the effectiveness of efforts to *control* expenditures.

No budget plan can be completely successful unless the enterprise is well organized and unless the lines of responsibility and authority are clearly drawn.

The Company

The enterprise to which these remarks relate is an organization which is set up to manufacture its products on a fairly large scale and distribute them nationally through its own sales branches. The lines of authority and responsibility are very well defined. The manufacturing organization is divided into three major divisions, further broken down into the several operating departments, each headed by a department head who is accountable for all those activities over which he has direct control. A central service division supplies general services to all three divisions.

The sales organization likewise is well outlined. The country has been divided into five major divisions, each headed by a division manager, who controls the activities of each of the sales outlets located in his respective division.

The Sales Budget

If the sales budget is to mean to the management all that it should, it will attempt to give the answers to these questions:

1. How much are we going to be able to sell in the forthcoming year, both in terms of dollars and quantities?
2. How many of each kind of product are we going to sell?
3. Where and by whom should the sales be made?
4. During the course of a budgetary period, will the budget provide a means of determining whether we are currently keeping up with the program as laid out? In other words, will it answer the question: Are we getting our share of the business and if not, who is falling down and why?

There are probably other questions which come to mind, the answers to which are wanted. However, the above are the main ones, and if these can be answered, the others can; for from this information it is possible to build up the financial program as well as establish an adequate system of quotas, which, used in conjunction with a selling incentive plan, insures a closer approach to the accomplishment of the program.

Accordingly, in preparing the estimate of sales, these factors are considered:

1. Past sales experience
2. Pricing policy
3. Additions or changes in the line
4. Amount appropriated for sales promotion and advertising
5. Local sales manager's estimates
6. General sales manager's estimates
7. Long-time growth trend
8. Seasonal fluctuation
9. General business conditions study
10. Nature of competition
11. Market potential analysis.

Sales Estimates of Sales Managers

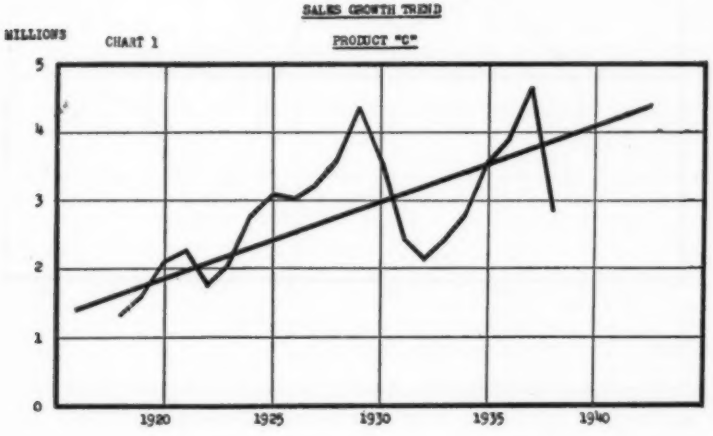
We first supplied to each of our local sales managers a form which provides for the insertion of estimates of sales by products for each of the months in the budget period. These sheets were filled out and reviewed by the sales manager who, after making adjustments in conference with the local sales managers, finally turned them over to the budget department. Of course, the sales department is always notified before preparing their estimates, of

any forthcoming price adjustments, changes in the line or any other change in policy that is likely to materially affect sales.

Sales Estimate of Budget Department

The budget department in the meantime has prepared an independent estimate of sales in the following manner: A thorough study of past sales was made for each group of products into which the line might logically be classified according to certain characteristics as to their utility and demand. Each group is studied separately and, for the purpose of this illustration, we will use Product C as the sample.

A chart was drawn up showing the monthly sales of Product C for as many years back as the figures were available, and we found that the sales curve jumps all over the paper with no apparent consistency. An analysis of these fluctuations revealed the presence of several disturbing influences such as changes in sales policy during the period covered, the introduction of new advertising campaigns, the effect of sales contests, etc. We therefore analyzed the causes and effects of these distortions and made adjustments to minimize their effects. The figures were replotted on a chart. These corrected figures appear on Chart 1.



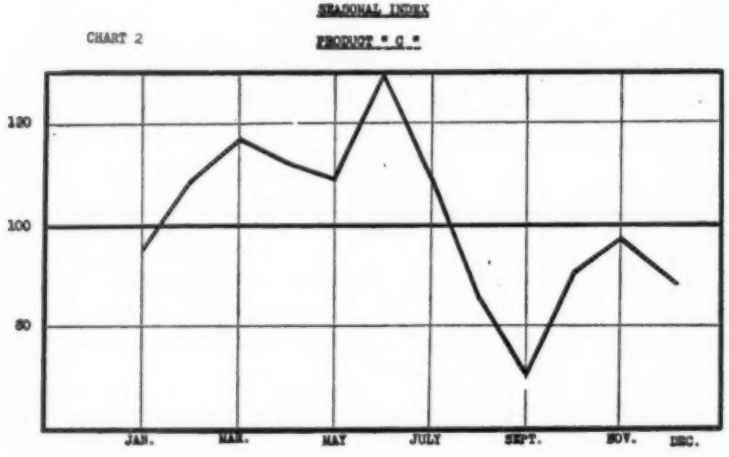
There is now apparent a steady growth trend that can be represented by drawing a straight line through the area covered by the curve in such a manner that about as much area shows below the line as above. This line, we say, represents the growth trend of Product C. (The growth trend must be watched closely and be adjusted periodically as the conditions warrant.)

There are other methods, involving higher mathematics, of determining a growth trend, but this is a very simple one and accurate enough for our purpose.

Seasonal Variation

The seasonal variation (or the month to month distribution within a year) was then determined by analyzing past sales by months. The results of this study appear on Chart 2 and the monthly variation is represented by an index expressed as a percentage of the mean which is equal to 100 per cent.

CHART 2

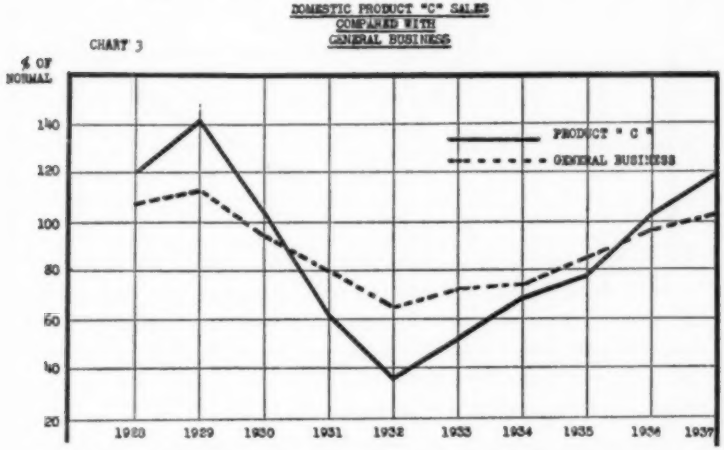


Sales Compared to General Business

The actual monthly sales figures of Product C were then adjusted by dividing out the effects of both the long term trend of growth and the seasonal variation to get a picture of the cyclical

changes in the sales experience as a result of the cyclical changes in demand.

This procedure provides the means of expressing past sales as an index for the purpose of making comparisons with some index of general business conditions. This comparison shows any lag that might exist between the two. If such a lag is present, this fact would become very helpful in forecasting, but no such lag exists for this product and we find a condition like or similar to the one appearing on Chart 3. Inspection of this chart reveals

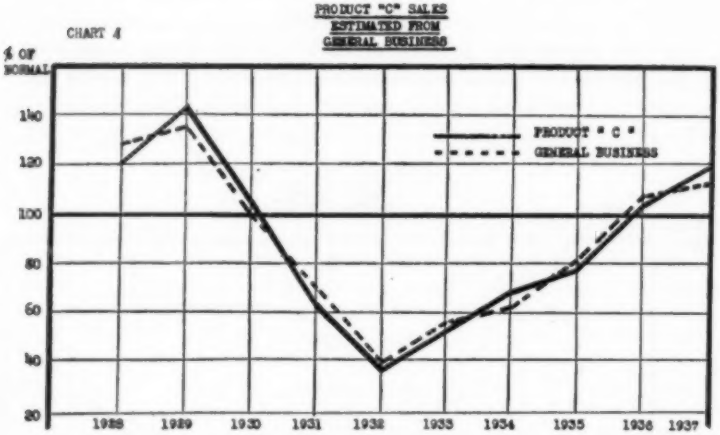


the relationship between Product C sales and general business conditions. The only difference between the two curves are those of amplitude but not of direction. For every time general business turns down Product C sales curve turns down with it, although the peaks and valleys of Product C sales are of greater proportions than those of general business.

We might well find the opposite condition, and this depends again on the nature of the product under study. For example, this index of general business conditions reflects the average of all types of business, both durable and consumers' goods combined, whereas the sales of Product C represent the activity in only one type of goods. However, the mathematical relationship or correlation was established between the two.

This relationship is used so that it is possible to estimate what Product C sales should be when general business is at any given level. As proof of this, on Chart 4 Product C sales are estimated

CHART 4



from general business conditions and are compared with actual Product C sales. The two curves are almost exact and therefore we conclude that we have determined a satisfactory measuring stick for the total sales volume of Product C.

Use of General Business Conditions Study

The mathematical relationship that exists between Product C sales and general business conditions has become valuable in forecasting the total volume of Product C business; for projections of general business conditions can be made by gathering the well-informed opinions of a number of economists. Converting these projections into terms of Product C business provides the basis for a fairly reliable sales forecast. Of course, to this basic estimate adjustments must be made for conditions internal to the business which we are able to see as forthcoming, such as the introduction of a new product or change in sales policy covering the sale of Product C.

Market Potential Analysis

In answer to the question, "Where and by whom should sales be made?" a market potential analysis was prepared. In the

preparation of a market potential analysis, Product C sales were studied geographically instead of chronologically as we did in determining the seasonal index and growth trends.

Of the several methods which have come into common use in making a market potential study, the method which was employed is known as the "multiple correlation method." It is based on the assumption that the distribution of the sales of a product tends to conform to certain fundamental factors. When several or more of these factors are found and combined into a common index, each factor having been given its proper weight, the index represents a measure of the potential distribution of the sales of that product.

For the sales potential study of Product C a number of factors were selected which logically had some bearing on the distribution of sales.

The factors selected were:

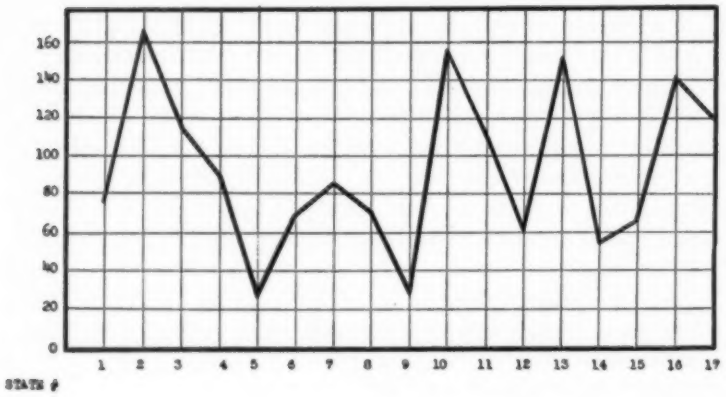
1. Wholesale sales
2. Bank deposits
3. Clerical workers
4. Value added by manufacture
5. Commercial telephones
6. Commercial enterprises
7. Retail sales
8. United States postal receipts
9. Commercial and industrial electrical customers
10. Population of "C" product in use.

These factors were then subjected to a correlation analysis and six were finally selected because of their high degree of correlation with the distribution of Product C sales. Through the use of multiple correlation, these six factors were combined to form a common index. The next several charts will serve to give a step-by-step picture of the development of this index.

On Chart 5 the unbroken curve line represents the geographic distribution of several years past sales of Product C. On Chart 6 we see the sales distribution of Product C repeated as represented again by the black line, and the broken line represents the

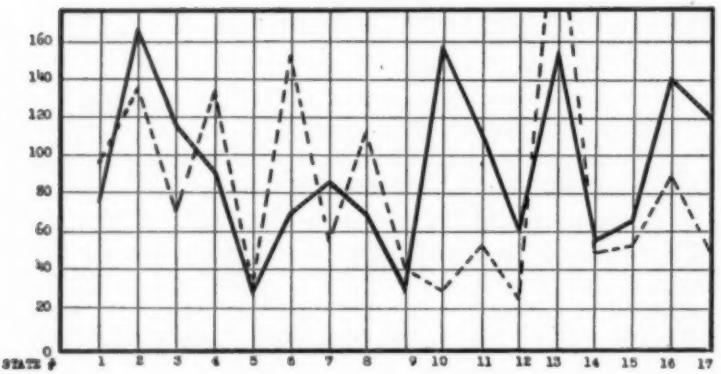
GEOGRAPHIC DISTRIBUTION OF PRODUCT "C"
PER CAPITA SALES BY STATES

CHART 5



PRODUCT "C" SALES COMPARED WITH WHOLESALE
BUSINESS BY STATES
PER CAPITA BASIS

CHART 6



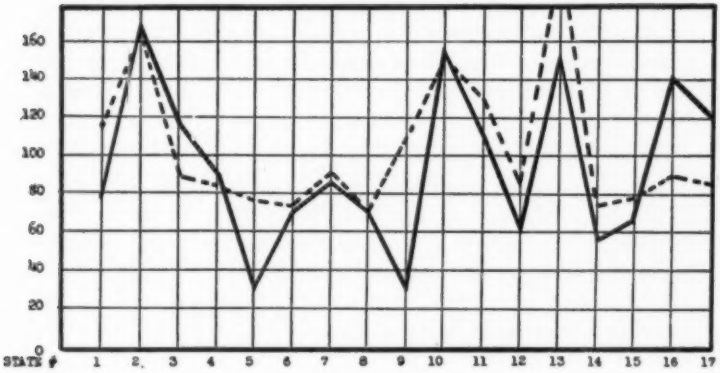
distribution of all wholesale sales as compiled from the United States Census of Business. Naturally, the points plotted on each of the curves are with reference to corresponding geographic units.

Casual inspection of this reveals that while there is some relationship between the two lines, it is not close enough to indicate that wholesale sales alone are a measure of the sales distribution of Product C.

In Chart 7, the unbroken sales line, representing the distribution of Product C sales, is again repeated. This time the broken line

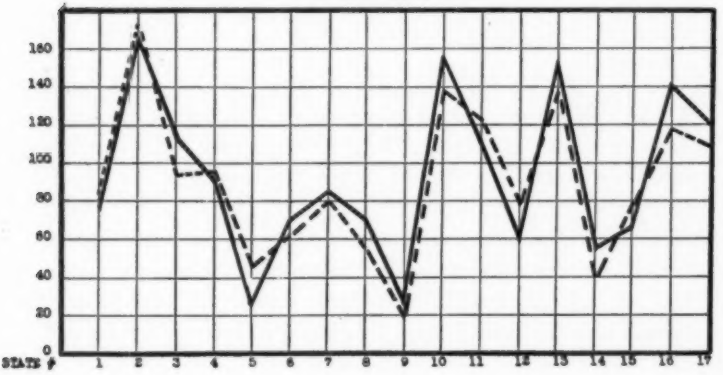
PRODUCT "C" SALES COMPARED WITH INDEX OF TWO FACTORS BY STATES PER CAPITA BASIS

CHART 7



PRODUCT "C" SALES COMPARED WITH COMPOSITE INDEX OF SIX FACTORS BY STATES PER CAPITA BASIS

CHART 8



represents a combination of two factors, that of wholesale sales and that of the distribution of bank deposits. We note now that the broken line follows with more consistency the unbroken line. On each of several succeeding charts (not shown) we have added one more factor to form the composite index represented by the broken line, and on Chart 8 we see two lines which very closely correspond. Here the dotted line represents a composite of the six factors selected, and, in view of the close correlation between the two lines, we conclude that the combined index represents a dependable measure of the distribution of Product C sales. The combined index is expressed in terms of percentages so that each percentage figure for a given geographic unit represents the proportion of business to the United States total sales volume of Product C.

Market Potentials Applied to Sales Forecast

These individual percentages were applied to the forecast of total sales of Product C to obtain the basis for the sales quotas. Incidentally, this practice of establishing a total sales volume for a given product and then breaking it down and assigning given proportions to each of the sales outlets making up the total merchandising division of an organization is known as the *descending* method of establishing quotas.

The next job was to compare these quotas with the estimates supplied by the sales department on the forms to which previous reference was made. The latter might be termed the *ascending* type of quota. Any wide differences noted between the two sets of quotas were reconciled in conference to the satisfaction of all concerned.

In this manner the final sales forecast for the whole country was established and served as the basis for the financial program. Because it was expressed in both dollar volume and unit sales, it also became the basis for the production program. As was suggested before, the estimates for each outlet became the sales quota for that outlet.

Inventories and Production Budget

Naturally, the foundation for the production and inventories budget was the sales budget. However, we have adopted a policy that was somewhat new in its application to our company.

Effect of a Constant Inventory Turnover Ratio

This new policy was developed by reasoning along the following lines: We recognize the principle that the more times we can turn over inventory at a profit, the greater will be the return on the investment, but the mere fact that we are obtaining high turnover of inventory does not necessarily assure the most profitable operation. Possibly, in the past, too much stress has been placed upon the financial aspects of inventories without due regard for the other factors which are involved and which might be equally or even more important than the factor of turnover rate. Some of the other factors tend to slow up turnover rate. This leads to the thought that to consider turnover rate as a constant in controlling inventories is not necessarily the wisest policy.

For example, in this company which manufactures to stock, close adherence to an inventory turnover policy based on a constant turnover rate can be unprofitable, for when sales volume turns down, we are immediately faced with the necessity of sharply reducing inventories and this tends to accentuate the peaks and valleys in manufacturing activity. This is a contributing factor to high labor turnover, general inefficiency, and expensive training problems when the trend swings upward, and gives rise to other problems in connection with labor conditions generally and with unemployment insurance taxes.

Inventory Turnover Ratio as a Variable

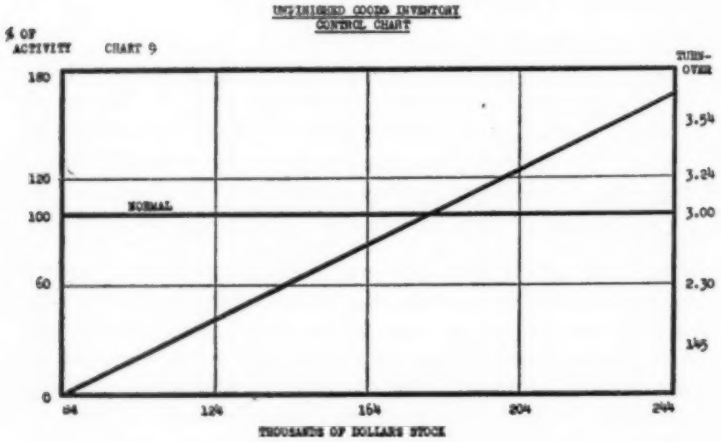
To illustrate just how wide the sweep in production can be in this company, we will again use the experience of Product C. As was pointed out on Chart 3, general business as measured by The Annalist index of business activity (if you will recall, this is the index by which we measure sales activity) averaged in 1932 64 per cent of normal, while in 1937 this average rose to 103 per cent. This is an increase in the average over this period of 39 points. In reviewing the sales experience for Product C, we discovered, as was also pointed out on this chart, that in 1932 the activity averaged 37 per cent of normal and in 1937 it averaged 110 per cent. Here we note an increase in the averages for the two years of 73 points. This change gives some idea of the wide fluctuation in sales peculiar to this type of business. Therefore, we must expect wide fluctuation in manufacturing activity. In-

ventory policy based on a constant turnover rate can make these sweeps in manufacturing activity even wider. Consequently, we developed the inventories and production budget on the basis of considering the inventory turnover rate as a variable instead of a constant.

Goods in Process Inventories

A study of the manufacturing processes and procedures of Product C revealed that due to the cycle of manufacturing, we could not expect a turnover of greater than four per year; and, furthermore, we discovered that certain operations requiring a considerable amount of setup demanded that the lots be processed in economic lot sizes. We also discovered that in order to satisfactorily reach sales requirements, we could not reduce a number of items in the work-in-process inventory for Product C below certain minimum quantities. These three factors meant that in the inventory, a fixed factor or float must be carried, and it was computed to be $84,000.

With this information, and estimating that at 100 per cent activity we should expect a turnover of three per year, based on the best judgment that was obtained from the executive in charge of this inventory, Chart 9 was prepared. The diagonal line

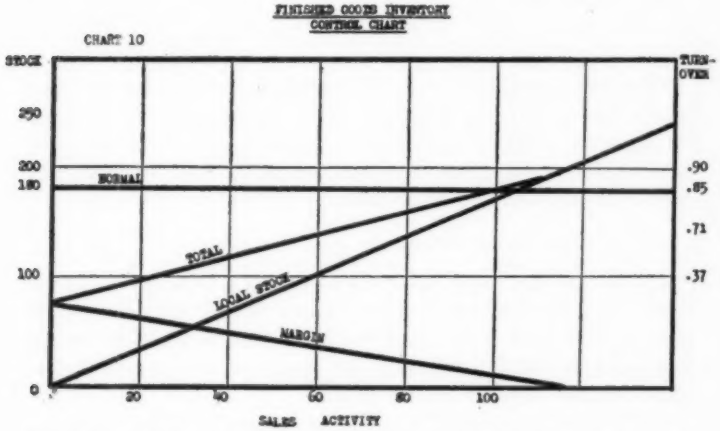


represents the turnover that we should expect when operating at any given level and also indicates the approximate amount of inventory expressed in dollars that should be on hand at any given level of activity. It will be noted that the rate of turnover varies at each operating level.

Finished Goods Inventories

The same principle was applied in developing a line to indicate the turnover and inventory quantities of finished goods on hand of Product C.

On Chart 10 we see a line that has been worked out to indicate the inventory balances and the approximate turnover at any



given level of sales activity. It is interesting to note that in working out this chart we discovered, upon interviewing the several executives charged with the responsibility of maintaining this inventory, that it was desirable to maintain certain stocks at several keypoints located throughout the country in order to properly service the stocks carried in each of the sales branches. This stock we labeled "marginal stock," and we felt that it should be at a minimum when sales activity is 100 per cent or more of normal. Therefore, in considering that it is desirable to have inventory to act as a cushion for production, this marginal stock should increase considerably as business drops off so that marginal stock

reaches its highest point when sales activity has reached its lowest point. It was also felt that the inventory on hand in the various sales branches should increase and decrease directly in proportion to sales activity. These charts (there being one worked out for each classification of inventory) should serve as a guide for measuring our efforts to control inventories as well as provide the basis on which we plan our production for the forthcoming year.

The Budget of Inventories and Production

Of course, in order to apply this principle and use it practically, sales had to be forecast sufficiently in advance, depending upon the manufacturing cycle, so that we could start moving and adjusting inventories and production in the proper direction to obtain the desired results by the time the conditions were realized on which the forecast was based.

With the procedures we have developed for an inventory and production budget, we attempt to do a lot more than flatten out the seasonal influence in the year's production curve. We take the next logical step and attempt to reduce the fluctuations caused by cyclical changes in general business.

Comparison of Results Using the Two Principles

Let us compare what our inventories and production programs would have been during the past six-year period using these principles as the basic policy, with what the results would have been had we been blindly following the policy of maintaining a constant turnover ratio of one per year.

On Exhibit 1 appears the opening inventory at the beginning of 1933 and in the first column appear the sales figures for each of the six years under review. With this information, we are able to estimate what production would have been in each one of the years in order to provide an inventory turnover rate of one per year in consideration of the sales volume turned over. It will be noted that production ranges from 238,000 units, which was the high year, to 80,000 units, which was the low year. However, had the policy been in effect, as was demonstrated on the charts employing the variable turnover ratio principle, we would see a reduction in the range of estimated production units; for, in the high year, production is estimated at 157,000 and in the low

EXHIBIT 1

SALES, INVENTORIES AND PRODUCTION IN UNITS

TWO PRINCIPLES COMPARED

This is what might happen to production requirements if management adhered to one turnover per year:

	A	B	C	D
	Actual Sales	*Inventory Opening*	*Inventory Closing*	*Production*
1933	80,000	80,000	80,000	80,000
1934	96,000	80,000	108,000	124,000
1935	107,000	108,000	106,000	105,000
1936	150,000	106,000	194,000	238,000
1937	176,000	194,000	158,000	140,000
1938	127,000	158,000	96,000	96,000

This is what would happen to production requirement if management were following the variable ratio of inventory turnover as outlined on the chart:

1933	80,000	80,000	143,000	143,000
1934	96,000	143,000	150,000	103,000
1935	107,000	150,000	180,000	137,000
1936	150,000	180,000	187,000	157,000
1937	176,000	187,000	163,000	152,000
1938	127,000	163,000	180,000	144,000
1939	152,000			

A—B+C=D

year it is 103,000. This is evidence of the effect of this principle in flattening out the production curve.

THE EXPENSE BUDGET

In general, the expense budget was set up, based on the principle that estimated figures of future expenses were needed to effect the co-ordination of the spending of all phases of the business so that each is allotted a share proportionate to the amount of work to be done.

In order to set up a type of a budget which would afford dynamic control and which would indicate exactly when and where to cut and spend, the variable type of budget was needed. There are two fundamental requirements of variable budget control. The first is the selection of a standard unit or index to measure volume. The second is the identification and classification of expenses by characteristic.

The Index of Volume

With respect to the first requirement, we selected two indexes by which we can measure the activity of the business as a whole or any part of it. One is for the purpose of measuring manufacturing activity, and for this we have selected the standard labor hour yield, that is, finished product expressed in terms of the standard hours required to produce it. The other is for the purpose of measuring selling and administrative activity, and for this we have selected the dollar volume of gross sales.

Classification of Expense by Characteristic

With respect to the second requirement of variable or flexible budget control, expenses were classified into three major divisions, as follows:

1. The first includes those which are known as variable expenditures and which are associated with volume changes for they move up and down more or less in proportion to the volume index.
2. The second includes semi-variable expenses and is made up of those expenses which move up and down with the volume index but not in proportion to it.
3. The third includes all those expenditures which are fixed. We recognized two types of fixed expenses. The first group consists of those expenditures fixed by conditions beyond what we term the usual control of management, and include taxes, depreciation, property insurance, etc. The second type of fixed expenses are those expenditures which, to a large extent, are fixed by management policy from year to year and include such items as executive compensation, advertising, promotional expenses, development expenses, etc.

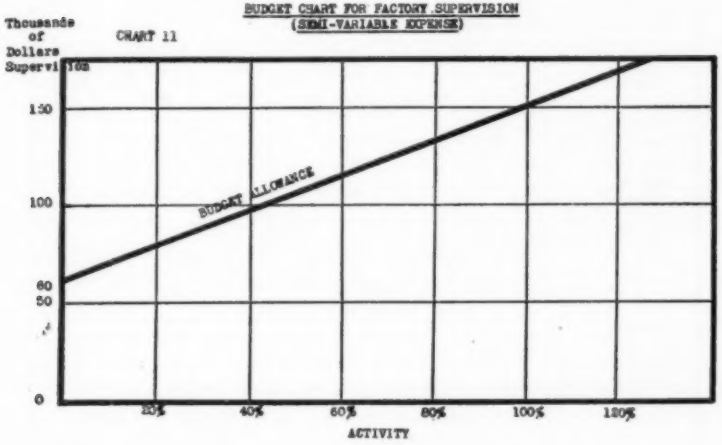
Manufacturing Expense Budgets

In building up the expense budgets for the manufacturing division, each expenditure for each department was classified according to its characteristic by selecting all of the expenditures which were readily identifiable as being fixed. This was comparatively easy to do. The next step was to select all of those expenditures which we could definitely say were variable, and this was also comparatively easy to do because by their very nature it became

evident that they move up and down pretty closely with production. The remainder of the expenditures, those which were not already selected either in the first classification or in the second, were classified as semi-variable.

The relationship any semi-variable expense bears to the index of volume which causes it to move up and down was established very simply in the following manner:

From past records, it was determined what these expenditures amount to at normal activity. It was also determined what the expenditures would be in the event of a practical shut-down. In other words, in the case of supervision, we knew that should the operations of the plant or of a particular department be practically shut down, line supervisors would be retained. This can be represented graphically and, as is indicated on Chart 11, we



see a diagonal line that intersects the expense scale at a point corresponding to the shut-down cost of maintaining supervision. This line passes through the 100 per cent activity line at a point which it is estimated should be spent for that volume. This line was then calibrated so that at any activity we could estimate approximately what should be spent in proportion to any given amount of volume.

In this manner all expenditures were studied, and on Exhibit 2

EXHIBIT 2

NACA COMPANY

FACTORY BURDEN

Year—1939

	Total Normal	*Fixed*	*Variable*	*Variable Rate per Point at Activity Index*
FIXED EXPENSE "A"				
Insurance Taxes Depreciation				
	450,000	450,000		
FIXED EXPENSE "B"				
Administrative Research Engineering Tools & Dies Depreciation				
	550,000	550,000		
SEMI-VARIABLE				
Supervision Maintenance Clerical Set-up Prod. Engineering Stock Room Telephone				
	1,200,000	300,000	900,000	9,000
VARIABLE				
Salvage Scrap Supplies Miscellaneous Labor				
	500,000		500,000	5,000
DIRECT LABOR INCREMENT				
Wage Fluctuation Overtime Vacations Shrinkage Guarantee Wages				
	100,000		100,000	1,000
TOTAL	2,800,000	1,300,000	1,500,000	15,000

we see the list of manufacturing expenses, indicating their characteristics and to what extent they change per unit of volume index.

Naturally, in setting up the expense allowance for any account, the department head responsible is consulted and his approval obtained before any allowance becomes officially effective to apply for the budget period.

Results of Variable Budget Control

This same procedure was followed in building up the budget schedules for administrative and selling expenses so that, provided as we were with the sales budget, we were able to set up a schedule of estimated allowances for all of the expenditures of the selling and administrative divisions, and with the production budget forecast, the manufacturing activity of which was expressed in terms of the manufacturing volume index, we were able to set up the schedule of manufacturing allowances for the volume anticipated.

During the course of the budget period, expense allowances were adjusted periodically to current volume. Differences between actual expenditures and budget allowances adjusted to volume indicated how much we should cut or spend to keep in line with the planned profit objective. Differences between budget adjusted to current volume and original budget allowances indicated the volume variances.

Conclusion

In conclusion, it must be realized from the foregoing that this paper has touched only upon certain phases of budgetary control. However, if these comments will stimulate even a little thought on the general subject or on the specific problems herein discussed, it will have served its purpose. The figures used throughout this paper are fictitious but the general relationships are true.

BUDGETING FOR CONTROL

By Clem N. Kohl, Controller,
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IN DISCUSSING this subject, I recognize the fact that budgeting brings to our minds several things. To some, a multitude of detailed reports and figures; to others, a well-laid plan to keep costs down and profits up; and perhaps to some it means setting up a goal which seems impossible of attainment.

Budgeting to me always seems to be similar to planning an automobile trip. We usually start by getting out the road maps and charting our course on paper. We also decide where we expect to stop the first night, the second night, etc.; how much time we have to spend at each place; and finally, just when we expect to get back home. By having our course mapped out in that way, we provide the means of checking ourselves on the progress we are making all along the line. Sometimes we run into detours and other causes of delay, but we find a way to get back on our schedule.

Budgets mean a lot of hard work, and quite frequently, disappointments. Even at best budgeting involves a tremendous amount of details. Budgeting, however, also has a very distinctive human angle, and it is that angle and the contribution budgeting can make to human welfare that I should like to have you keep in mind.

It is impossible to discuss budgeting without mentioning details, but I shall try to devote more space to the broader picture of budgeting as it applies to human welfare. You will hear about budgeting the "Gates way," for that is the only way I know. However, we have had sixteen years' experience, as we started our first budget in 1923. In that time we should have learned a little something about budgeting; at least we have learned a few things that will not work.

Seven Fundamentals

I may talk about some details of our own budget which do not fit into every business, as each business has its own peculiar problems. However, there are seven fundamentals which, regardless of the mechanics of the details, must be present if there is to be some semblance of control through budgeting. They are:

1. Sufficient detail
2. Wide participation in preparation
3. Flexibility
4. Regular comparison of actual results with estimates
5. Analysis of differences
6. Doing something about those differences
7. Some kind of incentive plan.

These are not set down in order of their importance; in fact, I should say that No. 6, "Doing something about the differences," is first in order of importance.

1. Sufficient Detail

I think all budgets should be divided into two major classifications:

1. The *profit and loss* budget
2. The *cash* or *balance sheet* budget.

While we are budgeting, we are concerned with sales and profits. However, it is equally important that sales programs stay within the reasonable limits of the resources of the company, for there is just as much danger from overexpansion as there is from too little business. Chronic indigestion from overeating is as bad as undernourishment; in fact, the fatal end in one case is usually very sudden, while in the other it is of a more lingering nature, giving an opportunity to do something to correct the situation.

The details of a budget are not very interesting, but let's discuss them briefly, to get our bearings. As budgeting is an attempt to forecast the profit and loss statement and the balance sheet at any given period, the detail structure of the budget might conform to almost any type of accounting system. In the final analysis we can start a budget by simply taking every account in the profit and loss statement and attempting to fill in the figures for the coming year; then converting the results into a balance sheet. That, in brief, covers the details of a budget.

To illustrate I shall touch only briefly on the detail procedure in our own case. While each business is "different," every business is fundamentally very much the same as every other business.

In preparing the profit and loss budget, the first step is the

breaking down of sales quotas. These sales figures are compiled by the men in charge of the various markets. First, a dollar figure for the year is arrived at, then broken down by months, then into products, and finally, the dollars are converted into units. This last step is necessary so that we may supply the production department with figures from which they may prepare their schedules. Production units and sales units are also used in calculating the change in inventory, which is a very important item in a profit and loss budget.

From the production department's monthly schedules the direct labor and material costs are figured. These costs by products are supplied to the budget department by the cost department. To these two items is added "goods purchased for resale," and the total of the three gives us our prime cost of production (not sales) by months.

Next comes service charges, or production costs, which include such items as power, water, maintenance of equipment, etc. To the total of this section is now added (or subtracted) the change in inventory. These last two added to the prime cost gives us the service producing cost, and this total related to sales gives us the service manufacturing profit.

Next comes the selling expense. Each market has a separate set of accounts, the principal items being home office salaries; field salaries, expense and bonus; cash discount, delivery; advertising; and warehousing.

To the total of this selling expense is added fixed factory overhead, which includes such items as depreciation, experimental work, local taxes, stores department salaries and expense, maintenance of buildings, engineering, efficiency, production, cost, time and employment department salaries and expense, and in our case 25 per cent of general administration costs. Next is added the remainder of the administration costs (75 per cent), which includes officers' salaries, various office department salaries (except sales), telephone and telegraph, postage, etc. Then comes non-operating expense, which includes such items as welfare, excise tax, employees' service dividend, etc. From this figure is deducted non-operating income (rents and other miscellaneous items). With all these expense items added together, the differ-

ence between sales and expense gives us our profit (or loss) figure.

In addition to working out an estimated monthly profit and loss statement, we also work out at the same time a monthly balance sheet and cash requirement schedule by months. The monthly production for sales is carefully analyzed to determine the sufficiency or insufficiency of production capacity. From that study a special committee determines what additional facilities are needed. If additional buildings, machinery, or tools are necessary, these expenditures and purchases are carefully scheduled; and while these expenditures do not enter into the profit and loss budget, they do enter into the monthly cash requirement schedule and budgeted balance sheet.

When we are through, we have three important schedules worked out by months:

1. Profit budget
2. Cash requirement budget.
3. Balance sheet.

From this cash requirement schedule we then determine our seasonal bank borrowings.

2. Wide Participation in Preparation

This is a very important phase in the successful operation of a budget system. Some individual or department must be responsible for finally gathering together all the many detailed figures, and this responsibility usually rests on the budget department or the accounting department. It is very important that the various parts of the budget be prepared by those who have the responsibility of the various phases of income and outgo.

For example, let us consider the sales budget. Our sales are divided into thirteen markets:

Accessories, Automotive
Accessories Export
Railroad Hose
Molded Rubber Goods
Battery Boxes and Covers
Garden and Commercial Hose
Industrial Division

Tire Dealer Division
(A & B)
Tire and Tube Export
Denver Service Station
Camel Back and Repair Materials
All other.

Now, let's see how this operates, taking one of the major markets—tires. The budget department might arbitrarily try to fix a sales budget, but that wouldn't mean much. It wouldn't be following the principle of "wide participation." Here is the way it is done: The general sales manager of this particular division is asked to give the budget department his estimated sales volume. The sales manager has under him in this case six zone managers. He asks each of these six zone managers for a sales estimate of his respective zone. Each of those six zone managers has under him eight or ten district managers who are asked by the zone manager to turn in a sales estimate.

Each district manager, in turn, has in his district from 50 to 100 dealers or customers. Now we are getting down to the fellow who has to do the work! The district salesman has before him a record of each of his dealers or customers, showing him what each dealer bought by months in past years. From this record, tempered by his ideas of what he thinks he can accomplish next year, the district manager sets down the figures showing the orders he expects to get during the coming year. Here is where the budget really starts. These sales estimates must be shown, so far as possible not only in total dollars, but in dollars by products as well.

Then the estimates travel back to the budget department by the same route as the request followed, and at each stopping point along the way they are scrutinized and challenged for "reasonableness." That is, we know that some salesmen are naturally more optimistic than others; therefore, for the sake of safety these individual estimates must be checked and rechecked for reasonableness and possibility of attainment. This must be done by those who, from experience, knowledge of general business conditions and other factors, can temper and balance excessive optimism or pessimism of salesmen.

Estimates must be considered from many angles by those who are in a position to do so. For example, it is conceivable that, given a certain number of dealers, each district manager might turn in a sales figure identical—or very nearly so—with that of every other salesman. But the sales manager knows from experience that not all men perform 100 per cent; therefore he must arrive at an average performance of all men, and adjust the totals of all districts accordingly before turning them in to the budget department.

On the other hand, if the sales budgets of all district managers were set at this average, about half of them would have an easy time reaching their goal, and would not put forth their maximum effort. Sales budgets, while they should be reasonable, should not be a "cinch." This, then, actually comes down to two sales budget figures, a field budget and an actual budget based on expected average performance of all men combined. This is an example of what I mean by "reasonableness."

The advertising and merchandising department then gets busy with these sales figures and tries to determine how much merchandising in the way of sales helps and advertising is necessary to help the salesmen reach their goal. In this, again, the responsibility is divided among several men whose job it is to handle the respective markets. The proposed expenditures and the percentage to sales are then scrutinized by the budget committee to see that these percentages are not out of line with allowable costs for advertising.

Dollar sales figures by products are then broken down by the production department into articles, to determine production; and into raw material requirements as a guide in purchasing.

Perhaps I am taking up too much time with these details, but the point I wish to make is that when we are through, a great number of people have had something to do with the making of the budget. In fact, anyone who has any responsibility for the expenditure of money or who can control expense has, somewhere along the line, the responsibility of turning in some part of the budget figures. Even the credit and collection department must turn in a budget based on the budgeted sales figures, showing by months how much cash they expect to have available from accounts receivable.

The matter of wide participation in the responsibility of preparing the budget has a very important bearing on the successful operation of a budget.

3. Flexibility

We shouldn't make the mistake of permitting changes to be made too easily. A budget should be "tough" to make if we expect to make progress.

In the early months of the budget year it may seem difficult to make the sales budget or stay within a given expense budget. Don't adjust the figures upward or downward for that reason, but instead insist that those responsible get busy to see by what ingenious means savings can be made through increased efficiency, or in what way sales efforts can be made more productive.

It is important that if we hold those who participate in the setting up of the budget figures responsible for staying within the budget figures, we also guard against the insertion of "cushions." It is a natural tendency with all of us to try to "save our face"; therefore in budgeting, if I am to be held accountable for a certain expense item, it is natural for me to want to provide a little extra for emergencies, or to play safe.

"Cushions" in a budget are desirable to a certain extent, especially from the standpoint of the cash or balance sheet budget. We should not cut the cloth too fine or we might get caught short if something unforeseen happens. Many companies have failed by over-reaching themselves. But these "cushions" should be provided in the finals by the budget department, where they are out in the open and can be seen, instead of being hidden in the many departmental accounts making up the budget.

On the other hand, let's not make the mistake of being "bull headed" about the budget figures. No one can foresee everything that might happen (particularly in sales) as we are dealing with human beings who control their own pocketbooks. The most carefully thought-out sales strategy may not work at all.

A good football coach carefully drills his team before every game in the perfection of certain plays; but when he gets them on the field against the opponents and finds that these plays fail to gain ground toward the goal, he gives instructions to try

something else. In like manner, if we find that, despite the most carefully laid sales and advertising plans, the prospects don't sign the orders as expected, we should not hesitate to make changes.

Perhaps general business conditions have changed or we have been too optimistic. Perhaps we should cut our sales force or the advertising expenditure. It may be that the only thing to do is to revise the sales budget downward and cut expenses as far as possible all the way down the line. Or, maybe we should put on *more* men and spend *more* for advertising. Perhaps we should increase our costs by improving the quality of our product.

Whichever way we decide to go, if we find that changes must be made we should make them courageously, but let's be sure that we revise our budgets all the way down the line so that we can have the final result clearly before us on the profit and loss statement, balance sheet and cash position at the close of the budget year.

4. Regular Periodical Comparison of Estimates with Actual Results

We need not dwell at length on this point, for its importance is obvious. We wouldn't get much fun out of any game we play if we didn't keep score; and these comparisons of estimates with actuals are simply a process of keeping score to know where we stand.

For example, we make:

1. Daily comparison of actual with estimated sales by markets.
2. Monthly comparison of actual with estimated itemized selling expense by markets; also comparison of actual with estimated service overhead expenses, fixed overhead expenses, administrative expenses, and non-operating expenses.
3. Monthly comparison of actual with estimate service manufacturing profit, gross manufacturing profit and net profit.
4. Quarterly comparison of actual with estimated manufacturing costs. Quarterly comparison of actual with estimated net contribution by markets.

In addition, of course, we go further, and compare not only the totals and sub-totals, but also the detailed accounts that make up these totals.

5. Analysis of Differences

Here again the importance is obvious, for we must know the reason for the differences before we can proceed to the next step, of doing something about them.

If this fundamental of budgeting is properly handled, it can be made a valuable aid to auditing. For example, royalty expense in one of our markets was exceeding the estimated expense figure. This brought about an investigation, and we found that a wrong basic figure was being used in compiling the royalty expense. A substantial contribution to net profit was made by analyzing this difference between estimated and actual royalty expense.

6. Doing Something About the Differences

We have put in a great deal of work on the part of many people, including executives and department heads, in preparing estimates and putting these together in the budget department. Each month we have analyzed every expenditure and have posted each item opposite each estimate. When we find substantial differences, then, naturally we must do something about them; otherwise we have gained little toward a realization of our objectives.

Quite frequently, of course, there are cases where we have simply made bad guesses; but at least we have found that out, and the next time we can take it into account. In many cases, however, it is surprising how many good suggestions for savings, cutting corners here and there, or some entirely new and improved ideas come out when many heads get together toward a common goal. Here again point No. 2, "wide participation," plays an important part, for the more people there are working toward an objective, the more likely it is that the objective can be reached. Team work is what gets the job done. Business is more complex now than it ever was before; therefore those at the top need more and more help from those further down the line.

Before we leave the point of doing something about the differences, I should like to say a few words about our method of procedure, for by experience we have found it to be very effective. Our company is managed by a Board of Managers consisting of fifteen members who represent the major divisions of the business—sales, advertising, production, distribution, research, etc., plus the officers of the company. This group meets regularly twice each week, and in these meetings all policies are finally determined. From this group a budget committee is appointed whose job it is to take up the problem of doing something about differences as they are reported by the budget department.

It is also the responsibility of this committee to scrutinize the various budget estimates as they come in at the beginning of the new year; to relate all of them to the economic soundness of the whole budget, and to recommend trimming here and adding there. All special expenditures throughout the year first go to this committee for study to determine their effect upon the whole budget goal; then these are brought up for final approval or rejection by the Board.

Various other similar committees, such as a price committee, a merchandising committee, and others, function in the same manner. We have found this system to work very effectively, and it fits right in with the principle of wide participation in the responsibilities of planning and carrying through of the whole budget.

We now come to the last point—incentives.

7. Some Kind of Incentive Plan

I do not mean to infer that a budget system without an incentive plan won't work, for I am sure that is not the case. However, I am very certain that it will work much better with an incentive plan than without.

There are many types of incentive systems, but I think one which is based on net profits fits in best with a budget system, provided it can be made simple and understandable to all types of workers.

I should like to take just a moment here to tell about the

plan we use at Gates. We base our plan on the theory that both stockholders and the employees have made an investment in the business. The stockholders or owners have invested their savings, and the employees have invested their time. Of course the employees have been paid for their investment of time in the form of wages and salaries, but in addition we believe that they have earned something more if, through good work, they have contributed to the general prosperity and progress of the business.

Therefore, after an employee has completed two years of service (which we consider a probation period), he begins to share in our service dividend. At the end of the year he is paid an additional amount of money, which is based on the percentage of net profits to sales. That is, if profits are 5 per cent or 3 per cent on sales (after tax and before interest on investment and dividends), he receives a check equal to 5 per cent or 3 per cent or whatever the figure may be, of his total earnings for the year.

It has been our experience that this system of profit sharing has been a great help in getting everyone to take the budget seriously and to help in their own way to achieve the goal. When coupled with a budget system, it is possible to point out what can be expected in bonus or dividend, and this is not left to chance. It is much easier to talk about expenses which are out of line if we can point out the effect on our own pocketbooks. But let me say also that while a budget can be made to work without having a profit sharing plan, profit sharing plans are sound even if you do not have a budget system.

In conclusion, perhaps I have given you the impression that operating a budget is something which is designed for purely money-making purposes. I am sure it does help to do that, just as any good accounting system is supposed to do, but budgeting has a human side to it, too, and this is by far the most important part.

For a good many years now we have been trying to solve some problems of business in Washington by making laws and more laws, and by creating bureaus and still more bureaus. But we now know that most of the problems can be solved only by business itself. For example, what is it that you and I and all the other workers in factories, stores, and offices are most concerned about?

Isn't it the security of our jobs? Isn't it a fact that the wage-earner continually wonders how secure his job is? Doesn't he wonder what will happen to him and his family if he should be so fortunate as to lose it through no fault of his own?

In a recent survey made and published by Dun and Bradstreet, we find the startling revelation that the average life of a business in the United States during the lifetime of most of us is only 5½ years. Brought down to the effect on the average worker, this means that he has had to look for a new job every 5½ years. Is it any wonder, then, that he has a feeling of insecurity, worry, and dissatisfaction with almost everything?

While we should admit that in the early days of our budgeting perhaps the profit motive played a big part, we soon learned that the human angle pushed itself forward. We found that by working primarily from that angle, profits seemed to come more easily and naturally. A plan is sound only when it produces the greatest good for the greatest number.

Budgeting has given us much more confidence in making decisions boldly, even in the face of generally bad economic conditions, for a carefully prepared budget tells us what will happen under certain conditions. Consequently we can get up the nerve to venture spending more rather than less money.

"Isms" can thrive and grow only on dissatisfaction. Democracy, which we love so much and would be willing to defend with our lives if necessary, thrives on reasonable contentment, security and opportunity.

If, therefore, as I think, budgeting can and does contribute substantially toward the stability of a business, thus going a long way toward making the worker feel more secure, satisfied and happy in his work, then we as accountants have the responsibility of doing our share now—before regimentation has gone too far—toward keeping this land of ours safe for democracy—not with *bullets*, but with *budgets*.

PRELIMINARY ANNOUNCEMENT

TECHNICAL PROGRAM

1940 INTERNATIONAL COST CONFERENCE

HOTEL JEFFERSON

ST. LOUIS, MISSOURI

JUNE 24, 25, 26 AND 27, 1940

TUESDAY, JUNE 25

Morning:

1. Recent Inventory Developments.
2. Problems Raised by Government and War Orders.

Afternoon: Group Discussions

1. Problems Under Last-In, First-Out Method.
2. Finished Goods Inventory Problems.
3. Safeguarding the Inventory.
4. Inventory Problems of Small Companies.
5. Government and War Orders.

WEDNESDAY, JUNE 26

Morning:

1. Streamlining Your Overhead Methods.
2. Reflecting Activity in Overhead Distribution.

Afternoon: Group Discussions

1. Problems of Overhead Distribution.
2. Normal Burden and Burden Variances.
3. Information for Foremen and Employees.
4. Depreciation.

THURSDAY, JUNE 27

General Topic: Co-operative Industry Efforts in Development of Sound Cost Practices, Cost Education Work and Circulation of Cost Information.

Morning:

What is Possible Under Present Laws and Government Attitude?

Afternoon:

Industry's Viewpoint and Actual Practice.

Presented by a trade association executive, a professional man, and an industry representative.